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ABSTRACT

The subject of this study was a Peruvian child who learned German first and, from the age of 2 years and 10 months, was systematically exposed to Spanish. At the age of 4, he had mastered both German and Spanish to the same degree of phonic, morphological, and syntactic competence. Two weeks after the surgical removal of a brain tumor at 5 years of age, the child began to develop a motor aphasia, followed by a sensory aphasia, caused by new brain lesions. Loss of speech occurred in the form of a gradual decrease in the frequency of utterances to zero, affecting both languages at the same time, which confirmed the hypothesis that the child had acquired a coordinate bilingualism. Among the hypotheses concerning bilingualism offered as a result of this case study are the following: (1) A bilingual education favors the development of cognitive and affective qualities in a child. (2) A bilingual education can result in the development of a coordinate bilingualism. (3) To develop coordinate bilingualism, it is recommended that the child learn one language first and begin learning the other at the age of 3 years and several months. (4) The first language should be the one spoken by the parents. (5) Both parents should speak to the child in the same language. (Author/PP)

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Psycho-linguistic and Pedagogical Aspects in the Bilingual Education of a Child of Pre-school Age*)

Abstract

The following is a report of the experience obtained in the bilingual education, psycholinguistically and pedagogically planned, of a child in Trujillo, of a Peruvian mother (Trujillo born) and a German father. At home, where the German language was the means of communication between husband and wife and between the parents and their child (only son), the child learned this language first and at the age of three had achieved a mastery in its usage slightly better than a child of average mental development of the same age has in speaking Spanish as his first language. From the age of 2 years and 10 months on, the child was systematically exposed to Spanish and learned this language in a few months. At the age of four, the child had mastered both languages with the same grade of perfection (without interferences) at the phonic, morphological and syntactic levels. At five years of age, the child suddenly showed symptoms that indicated a lesion in the right cerebral hemisphere (left hemiplegia), and in an emergency operation, a

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tumor (fibrosarcoma primary of the brain), was extirpated. Twelve hours after the operation the child showed normal mental and emotional reactions and spoke both languages as he had done before, recovering quickly from his left hemiplegia. Nevertheless, two weeks after the operation the child began to develop a motor aphasia, followed by a sensorial aphasia as a consequence of lesions in other areas (surgically inaccessible), as was verified by a brain scan. The loss of speech occurred in the form of a gradual decrease of the frequency of utterances down to zero, affecting both languages at the same time, which confirms that the child had acquired a coordinate bilingualism. Four weeks after the operation the child entered into a state of coma and died ten days later.

1. Description of the child's home enviroment

The child was born in Trujillo of a German father (who emigrated from Germany after having completed tertiary education) and a Trujillo born mother (who had received tertiary level education in Trujillo). The mother had begun to study German in Trujillo as an adult, and, after spending a year in Germany to perfect her knowledge of the language, and before marrying, mastered the language sufficiently well enough to be able to express herself correctly, fluently and with good pronunciation.

The only relative who daily visited the home was the child's maternal grandmother who spoke only Spanish. There was also a domestic servant in the house who also only spoke Spanish but she had no contact with the child whatsoever.

German was the language used between husband and wife. The boy was an only child.

2. The Planning of the Child's bilingual education

2.1 Previous Decisions

In order to plan for the bilingual education it was necessary for the parents to come to an agreement about the following:

(a) Should the child learn both Spanish and German while still of pre-school age?

The parents answered this question affirmatively for the following reasons

Unlike the learning of a language through study, a child's language development takes place thanks to the singular depth of daily experiences that he has on making conscious contact with the phenomenon and things that surround him and on his entering into an interaction with his environment as a member of the linguistic community in which he is growing up.

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This unique stage should be taken advantage of so that the child by means of his daily experiences in real situations acquires a mastery of German and Spanish as two co-ordinated linguistic systems (1) that is to say, by means of the learning of two languages on the basis of two separate referencial systems; this being different from the mastery of both languages as only one linguistically combined system where the learning of the first serves as a system of reference for the second.(2)

The learning of the two languages as linguistically co-ordinated systems means supplying the same security in both languages since in this case the interchange of stimuli and reactions in each language is produced in processes of separate verbal mediations, while in combined bilingualism this interchange is given by means of only one process of mediation, causing, generally, interferences between both languages.

The learning of two languages as two co-ordinated, linguistic systems at pre-chool age is especially favourable from the neurophysiological point of view because during this period the brain, being in a stage of development, is characterized by a high grade of plasticity.

This can be verified by the proven fact that at this stage the almost complete rehabilitation of speech functions is possible after cerebral damage. (3)

After responding affirmatively to question (a) the following question was then raised

(b) Should the child learn the two languages simultaneously?

It was thought not, the decision being based on the following argument

(aa) The mode of a child's pentration in the world by means of his first language varies from language to language. Each language focuses upon determined aspects of the reality with greater emphasis than others, distinguishing and differentiating matrices and moments in a unique way. When this process is realized for the first time it leaves impressions in his mental development. Well now, if the child passes simultaneously through such precesses, each one influencing his mental development in a different way, it could be that this would produce perturbations in the child's cognitive and affective control. As well, the attempt to assimilate two different systems for oral communication at the same time

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will undoubtedly constitute very considerable mental exertion for the child which will quickly result in one of the two systems gaining more ground than the other.

(bb) In the present case, if the child had been exposed to the two languages simultaneously the means of communication between the mother and her child would have been Spanish, while German would have been the language spoken between the father and his son. Considering the powerful unifying force that a language exercises, the integration of the family would have been affected if the child has learned to speak to his mother in one language and to his father in another. After rejecting the idea that the child learn the two languages simultaneously the following question arose:

(a) Which of the two languages should the child learn first?

It was decided that the child should learn Spanish first for the following reasons:

(aa) Co-ordinated bilinguism is conditioned so that the child learns the two languages in different social contexts and emotional situations. The emotional relationship of the child with his

parents evidently is of another kind to that of the child's experiences outside the child-parent relationship. It was considered that it would have been a mistake, psychologically to introduce Spanish as the first means of oral communication between the child and his parents and later substitute it for German. Such a process would have affected the child's emotional state.

(bb) Considering that Spanish was going to be the language spoken outside the child-parent relationship and particularly later in the environment outside the home, the slight inclination of the child to communicate with his parents in German as a second language and the change to Spanish each time that he had difficulties in expressing himself in German would have been accentuated due to the Spanish speaking environmental influence outside the parent-child relationship, in such a way that in these circumstances, the child would never have acquired the same confidence in German as he had acquired in Spanish. On the other hand, the child, linked emotionally to his parents by means of German, would always prefer this language when communicating with them and in this way, thanks to their direction and encouragement would increase his mastery of this language.

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2.2 Steps Taken

So that the child could learn German first, it was necessary to expose him systematically to this language and to avoid situations of verbal communication with Spanish speaking people. The steps taken to achieve this end were the following:

(a) The child's education remained completely in his parents' hands. That is to say, there was no intervention of Spanish speaking people. The domestic help had no contact with the child.

(b) The grandmother in her contact with the child did not speak to him in Spanish. (Later on, in the measure that the child learned to speak, she also learned some words and simple phrases that she began to use in her communication with him.)

(c) Daily the mother as well as the father dedicated the longest time possible to playing with the child offering him stimuli for verbal communication.

(d) Only German speaking children were allowed to be the child's playmates and this was somewhat a problem as there were few German speaking families in Trujillo. An attempt to counteract the relatively few opportunities for the child to play with other children of the same age was made by means of step (c).

3. The child's language development

3.1 The child at the age of 2 years 10 months spoke German with the same ability as a child of normal mental development is able to at the age of three years and a few months.

(a) He correctly used syntactic patterns.

(b) His vocabulary included more terms used by adults and this was due to the little contact he had with children up to that time.

(c) As to pronunciation, the child had difficulties in articulating inicial k, substituting a t for this sound, a defect which could not be considered as abnormal at his age.

3.2 The child realized that his parents used another language when speaking to other people. Towards the end of the stage previously mentioned the child began to ask his mother to translate the conversation she had with Spanish speaking people. This was a sign to the parents

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that the child could now be systematically exposed to Spanish.

3.3 Because of the contact the child had with his grandmother and his small friends who came to the house, he quickly acquired facility in expressing himself in Spanish, in such a way that at the end of four months he spoke it as well as he spoke German. His ability to express himself in German continued to increase as his father and mother continued to speak to him in this language.

It is obvious that the situations the child experienced in his relationship with his parents were not the same as those he had with his small playmates and as a consequence of this his vocabulary in the two languages did not develop along the same lines. The child quickly realised this and this was the reason why the parents directed him to ask his grandmother in Spanish how she would explain this or that thing in Spanish, instead of his parents giving the Spanish equivalent of the corresponding German word. Similarly, when the child wanted to know the German equivalent of a Spanish word, his parents did not supply it until the child explained in German what he was referring to. The child accepted all this as a game.

So the child began to be aware of the fact that he had at his disposition two different oral systems of communication, which were of use to him in different social contexts.

3.4 On each occasion that the child had the opportunity for contact with a German speaking person, although he realized that the person also spoke Spanish, he would converse with him in German. The parents encouraged this with the aim of ensuring that the child, when older and particularly when he had more contact with the Spanish speaking environment outside the home, would maintain his loyalty to the German language.

4. The Child's Cognitive, Affective and Conative Development

The parents were aware of the development in their child of:

(a) a remarkable gift of observation.

(b) an excellent memory, auditory as well as visual.

(c) a marked sense of values.

(d) a high degree of sociability and adaptability to people of different ages and to rapidly changing circumstances.

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The child was clearly aware of the fact that he mastered two languages and he felt this was to his advantage. This was noticeable each time German speaking people came to the house. He quickly made friends with them. It was also obvious when he spent three weeks in Germany with his mother.

At no time did his parents note negative symptoms in their child's mental and affective development. On the contrary, before he became ill, soon after his fifth birthday, the child had a personality that could be called precocious. He impatiently awaited the time when he could go to kindergarten. The child showed greater skill in the use of his left hand.

5. Mastery of the two languages immediately before the child became ill

The child spoke the two languages with the same facility without interferences of any kind. The following were particularly obvious:

5.1 His pronunciation in German and in Spanish could be considered as that corresponding to native speakers of these languages.

5.2 In each of the two languages the child expressed himself using slightly more complex syntactic constructions than a child of his age usually does.

5.3 His active vocabulary was not exactly the same in both languages. There were words he used in one language but those equivalents he did not know in the other and vice-versa. He always displayed to supply him with the corresponding equivalent.

5.4 His manner of speaking - as much in German as in Spanish - was characterized by remarkable clarity. He formulated his ideas in precise phrases.

6. Loss of speech during his illness

6.1 The child's illness (5)

After having attended a kindergarten in Lima for two days (one week before the child had had a routine medical check-up) the child from one moment to the next moment showed signs of tiredness and a much stronger desire than usual to sleep and he occasionally vomited. The child's condition was interpreted by a pediatrician as a

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result of the emotional crisis caused by taking him from the environment to which he was accustomed. (move from Trujillo to Lima; the father remaining in Trujillo; attendance at kindergarten.)

Three days after the first symptoms appeared, the child returned to Trujillo by plane to recuperate in his familier environment. A left hemiplegia suddenly developed and revealed damage in the right cerebral hemisphere. (a large tumor in the posterior part of the front lobe (F d) and the entire parietal area. The tumor (fibrosarcoma primary of the brain) was completely extirpated.

6.2 The child's speech after the operation

The child, who had entered the operation theatre in a semi-conscious state, came out of the operation very well and within eight hours was speaking both languages as well as before he fell ill. He demonstrated normal behaviour in every way. Eight days later the child had to be flown to Lima for a brain scan and this revealed a pathomorphological response in the front parietal region, the posterior frontal region and in the temporal zone as well as in the parietal occipetal region which was the area which had been operated on. He was also taken to Lima for radiotherapeutic treatment.

Twelve days after the operation the child began to develop a motor aphasia. He spoke gradually less and less in both languages but with the peculiarity[1] that he continued to use both languages selecting between the two according to the language spoken by the person to whom he was speaking, and[2] all the phrases spoken in both languages were grammatically correct up until the time when he could no longer speak, that is to say, the typical symptoms of phonemic, lexic and syntactic aphasia were not present.(6). Following this, the child began to develop a sensory aphasia which was also parallel in both languages, understanding less and less. Fifteen days later the child entered into a coma and died ten days later.

7. Concluding observations

As a result of this report we can formulate the following hypothesis

7.1 A bilingual education favours the development of cognitive and affective qualities in a child.

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7.2 Given certain conditions a bilingual education can be planned in such a way that it results in the development of a co-ordinate bilingualism in the pupil.

7.3 To achieve the development of a co-ordinate bilingualism in a child, that is to say, where he acquires the maximum confidence in both languages, it is recommended that he learns one of the two languages first and then begins learning the other, preferably at the age of three years and several months.

7.4 The first language should be the one spoken by the parents, it being understood here that this language is different to the one spoken outside the home.

7.5 With the aim of consolidating the emotional bonds between the child and his parents, and assuring therefore his normal affective development, it is recommended that the father and mother both speak to him in the same language, which of course implies that in the case of a mixed marriage, both husband and wife master this language.

7.6 In the case of progressive aphasia in bilingual speakers, the gradual loss of speech will have a parallel effect on both languages, if it is really a case of co-ordinate bilingualism.

7.7 In motor aphasia the loss of speech will not necessarily manifest itself in the formation of statements which are incorrect phonetically, lexically or syntactically, but rather it will result in a gradual decrease in the frequency of grammatical utterances, until it reaches zero.

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